DIABETES QUALITY CARE MONITORING SYSTEM

QUALITY IMPROVEMENT *REPORT*

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This issue of the Diabetes Quality Care Monitoring System – Quality Improvement Report (DQCMS-QIR) highlights information regarding multivitamins and minerals for people with diabetes.

PAGE

Multivitamin Use in Patients with Diabetes

Is there any benefit?

Many patients with diabetes take regular multivitamin and mineral supplements, but there have been few studies to document the effectiveness of the supplements. Barringer and colleagues enrolled a group of 158 participants to examine the frequency of infection-related illness and absenteeism in persons using supplemental vitamins compared to persons receiving a placebo.

Participants were stratified by age (45 to 64 years or ≥ 65 years) and randomly assigned to the treatment group (n=78) or the placebo group (n=80). The study sample included 51 participants with type 2 diabetes. Participants were stratified by age and diabetes because increasing age and the presence of diabetes may decrease immune function and increase the likelihood of sub clinical micro-nutrient deficiencies and susceptibility to infection. Outcomes of the study were the incidence of participant reported infection and "absentee" days defined as missing work or the inability to perform planned activities.

Participants were followed for one year and asked to record daily diaries containing a symptom checklist. The variable used to assess infection incidence relied on the participant reporting an infection or no infection. The study also measured the significance of the infection using "absentee" days. Twenty-eight participants dropped out of the study (15 in the treatment group and 13 in the placebo group). The most common reasons cited for participant dropout were the inconvenience of keeping a daily diary or attending quarterly physician visits. Only one serious adverse event occurred during the study, a cardiac arrest with the individual being successfully resuscitated and subsequently remaining in the study.

In the overall study group, the study found that 73% of the placebo group experienced one or more infection-related illnesses compared to 43% of the treatment group. Similarly, 57% of the placebo group reported illness-related absenteeism compared to 21% of the treatment group.

Further analysis in the age and diabetes subgroups found 93% of the diabetic participants in the placebo group experienced an infection-related illness compared to only 17% of the diabetic participants in the treatment group (relative risk, 0.18 [95% CI, 0.07 to 0.44]).

Among patients with diabetes, absenteeism was reported more often in the placebo group (89%) than in the treatment group (0%). Interestingly, no similar difference was found in the participants without diabetes.

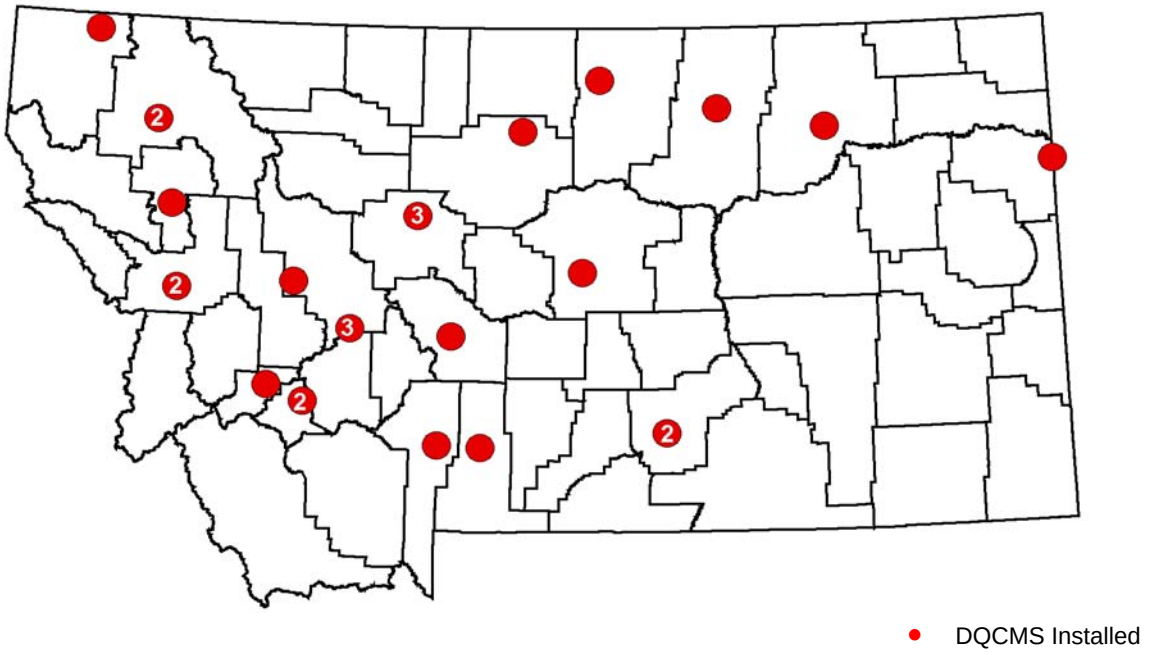
In this study, participants younger than 65 years of age experienced an apparent reduction in infection because of vitamin supplementation.

Because the sample size for participants older than 65 years of age was small, the study could not draw any meaningful conclusions for this participant group.

In summary, the results of this study suggest that a safe, simple and inexpensive way to promote wellness in patients older than 45 years of age with type 2 diabetes may be to recommend a daily multivitamin and mineral supplement.

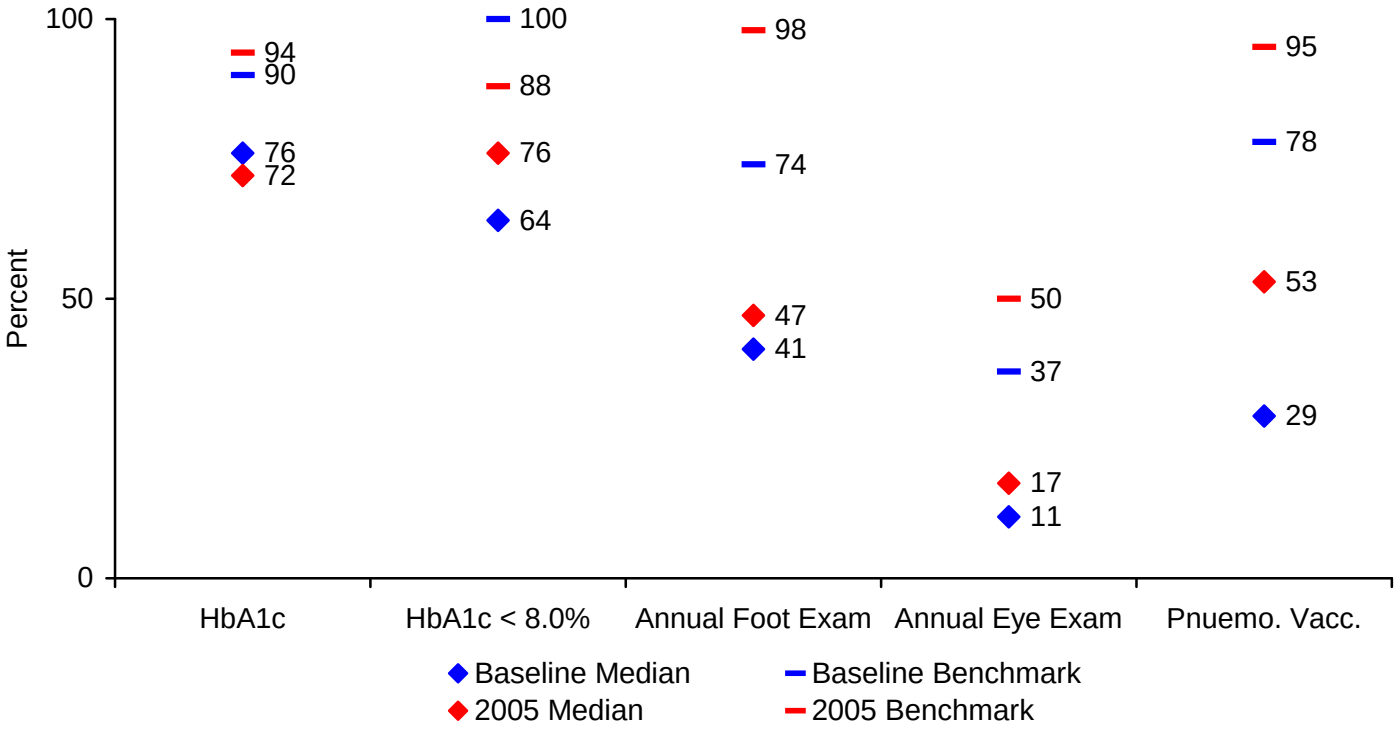
Reference
1.Barringer, TA, Kirk, JK, et al., Effect of a Multivitamin and Mineral Supplement on Infection and Quality of Life, Ann of Intern Med. 2003;138:365-371.

FIGURE 1: PHYSICIAN OFFICES PARTICIPATING IN THE DIABETES QUALITY CARE MONITORING SYSTEM (DQCMS) PROJECT, April 2005



(N = 27)

FIGURE 2: DIABETES CARE INDICATORS FROM MONTANA PHYSICIAN OFFICES PARTICIPATING IN THE DCMS/DQCMS PROJECT, BASELINE (N = 23 CLINICS; 4,805 PATIENTS) AND APRIL 2005 (N = 27 CLINICS; 7,476 PATIENTS)



Successful Quality Improvement

~Multilevel Quality Improvement Intervention to Increase Pneumococcal Immunization Rates in Primary Care Practices 2004~

Background: Pneumococcal immunization protects persons with diabetes from potentially life-threatening complications of pneumococcal disease. More specifically, persons with diabetes are at an increased risk of the bacteremic form of pneumococcal infection and have been reported to have a high risk of nosocomial bacteremia, which has a mortality rate as high as 50%, according to the American Diabetes Association. Safe and effective immunization is available that can greatly reduce the risk of serious complications from pneumococcal disease. The Centers for Disease Control Prevention Advisory Committee on Immunization Practices recommends pneumococcal vaccine for individuals ≥ 65 years of age as well as for all individuals of any age with diabetes.

Intervention: Five primary care practices in Montana using the Diabetes Quality Care Monitoring System (DQCMS) were targeted for quality improvement efforts to improve pneumococcal immunizations in patients with diabetes. All practices generated recall/reminder letters to those who were not known to have received the vaccine, and educational posters were displayed in the clinics. Immunization clinics were planned for the fall to give pneumococcal and influenza immunizations; however, due to the shortage of flu vaccine at that time, the formal immunization clinics were cancelled. Immunization rates were measured at baseline (Oct/Nov 2003) and monthly using data from the diabetes registries. Monthly feedback of progress was provided to each participating clinic. The data provided back to sites included their personal data and aggregate data from other sites.

Results: The five primary care practices monitored 3,047 patients with diabetes. Baseline pneumococcal immunization rates for all patients in the five practices averaged 47%. From baseline to March 2005, pneumococcal immunization rates significantly increased from 47% to 59% at follow-up.

Conclusion: Practices using diabetes registries were able to increase pneumococcal immunizations throughout the year rather than waiting for the flu vaccination “season”.

For more information on this project or if you are interested in a similar QI project, contact Nikki Buck at 444-7324.

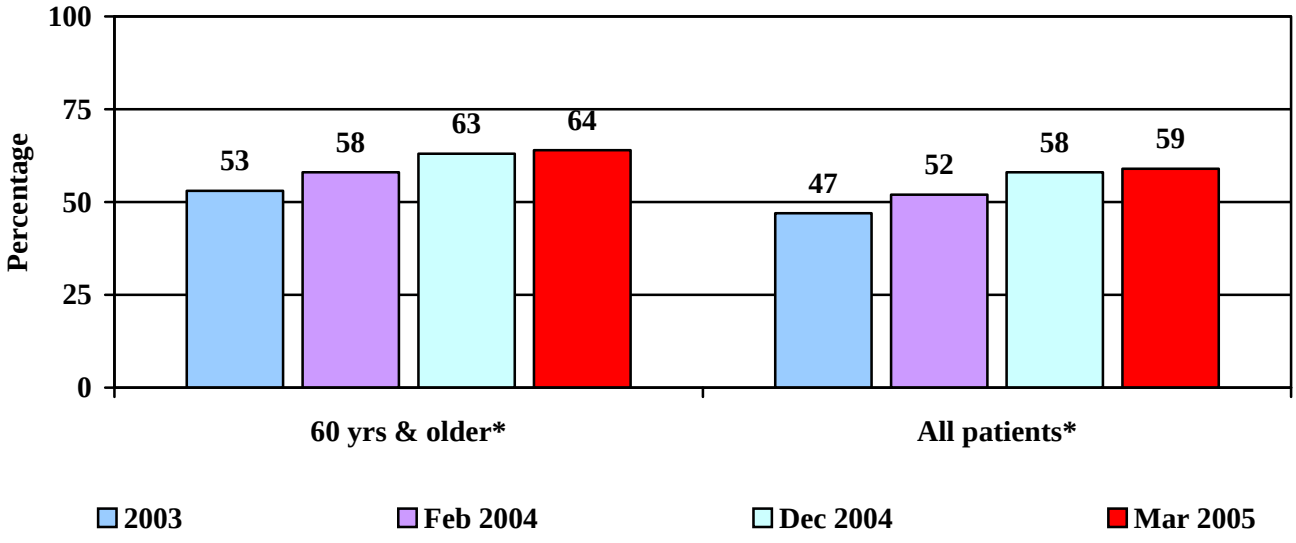


Table 1. Percent of pneumococcal immunization among patients with diabetes from selected primary care practices participating in the DQCMS/DCMS project, Montana, 2003 - March 2005

*P ≤ 0.05 Comparison between 2003 and March 2005

~ *A **Red Carpet** Welcome to our NEW Quality Improvement Partner:* ~

Sweet Medical Center
Chinook, MT

Professional Conferences Save the Dates:

WHAT: Montana Diabetes Conference
WHEN: October 6-7, 2005
WHERE: DoubleTree Hotel
Missoula, MT
(Call 406-444-6677 for more information)

WHAT: Wyoming Diabetes Conference
WHEN: September 15-16, 2005
Dinner presentation Sep 14
WHERE: Holiday Inn
Sheridan, WY
(Call 307-587-5689 for more information or visit http://wdh.state.wy.us/diabetes)

Are you doing all that you can to assist your patients to quit smoking? Remember the 5 A's to successful smoking cessation:

- **A**sk
- **A**dvise
- **A**ssist
- **A**ssess
- **A**rrange

There is help available to quit smoking through the **Montana Quit Line.**

1-866-485 QUIT (7848)

Staff Changes at MDP

Nikki Buck RN, BAN has joined the program based in Helena as a Quality Improvement Coordinator. If you have questions about DQCMS, please feel free to contact Nikki.

Janet McDowall is no longer working with the MDP. We will miss her hard work and dedication to improving diabetes care in Montana!

Todd Harwell, formerly the MDP Program Manger is now Chief for the Chronic Disease Prevention & Health Promotion Bureau. He continues to support the MDP activities in his new capacity.

~Montana Diabetes Project (MDP) Staff~

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